



UCSB *Alumnus*

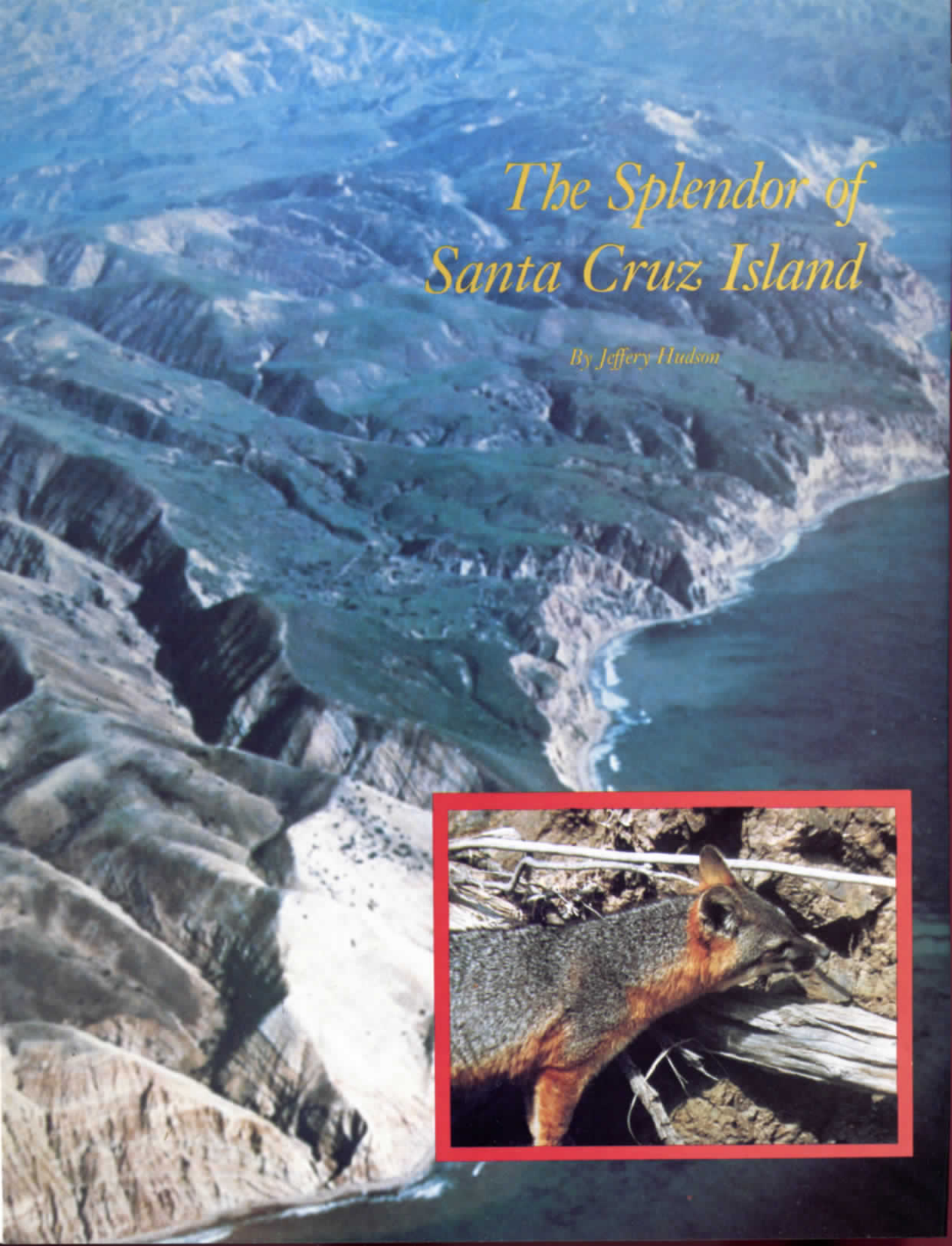
Nov./Dec. 1980

Vol. 11, No. 3

Santa Cruz Island: Research in Paradise

Also Inside:
Norman Cousins, Joseph Duffey and
Michael Harrington on the Future of Liberalism



An aerial photograph of Santa Cruz Island, showing a rugged coastline with steep cliffs and a small bay. The island is surrounded by deep blue water. The title and author's name are overlaid on the upper right portion of the image.

The Splendor of Santa Cruz Island

By Jeffery Hudson



Every Santa Barbaran is aware of Santa Cruz Island. The rocky spine of the island's main ridge is an impressive sight, visible from much of the South Coast whenever the weather is clear.

Yet for most people Santa Cruz Island is something like the moon—you see it all the time, but you can't go there. It has never been a vacation spot or a destination for commercial cruises. The island's owners have been careful to shield it from publicity and keep it in a largely undeveloped state.

But limited scientific research is allowed, and since 1966 UCSB graduate students and professors have been involved. The University maintains a research station on the island, used for field work in connection with botany, geology, anthropology, biogeography, zoology, the marine sciences, and other disciplines. The work includes research into plants and animals found only on the Channel Islands, microscopic fungi (and how they know where to grow), plus an investigation that's shaking up long-held theories about how the Channel Islands were formed and populated.

Santa Cruz Island is not an easy place to reach. Most researchers go out on a U.S. Navy vessel from Port Hueneme. The island landing is about 24 miles from the harbor, and the trip takes about two hours.

As the mainland drops behind, Santa Cruz Island looms larger on the horizon. The island is a little over 25 miles long and up to six miles wide—about 62,000 acres in all. Incoming vessels cruise along the coastline for several miles before reaching the pier. Most of the shoreline is rocky and steep, difficult for landing but heaven for the seabirds, seals, sea lions and other species that live on the rocks and in the waters. Migrating whales are often seen in season. Green gullies lead up into the hills behind the cliffs, giving a glimpse of just how big the island really is.

The boat ties up at a wooden pier along a beach and the researchers unload their own gear. The 85-foot craft stops only twice a week, so the researchers must bring enough food, bedding and equipment to last a while.

From the pier, the researchers ride by jeep to the research station, located in the central valley that bisects the island. It's an amazing valley—when you're in the midst of it you're hard-pressed to believe you're still on an island. There's a year-round stream, hundreds of trees, and from many locations you can't see the ocean at all. The climate and appearance are similar to the upper parts of the Santa Ynez Valley on the mainland. Only the receding sensations of the rolling trip out remind you where you really are.

The research station is not a fancy place. It can sleep a maximum of twenty on a variety of cots. There is electricity from diesel generators, running water, and heat. Space is limited—on one end of the central table you can find biologists looking into microscopes; at the other end, dinner.

Life at the station is simple and work-oriented. Spouses and children stay behind on the mainland. Electrical "convenience" appliances such as hair dryers are virtually non-existent. There's a small library of paperbacks left by earlier visitors, but no television. It's quite a switch from the mechanized urban life most of the researchers lead back at the University.

But everyone speaks of their time on the island in glowing terms. The coziness of the station makes for a highly-charged interdisciplinary atmosphere, with a lot of sharing and comparing of information. Away from the station, the island is very peaceful, which allows an unusual degree of concentration. And the island is also very beautiful—people's eyes light up and they use words like "wonderful" and "fantastic" to describe their experiences there.

Put simply, Santa Cruz Island is a researcher's dream. It offers uncontaminated and unique populations of several plants and animals, and it poses fascinating questions about how they got there. Finally, the island offers an atmosphere where work can be conducted without interference from tourists, developers, and department meetings.

Dr. Adrian Wenner of the Marine Sciences Institute began his work on Santa Cruz Island studying sand crabs. He compared the ones he found on the island to crabs from various mainland locations, including the waters around the San Onofre nuclear power plant.

Among his findings were that the island's crabs are for some reason smaller than mainland crabs. He also found that when the San Onofre plant was in operation, the crabs around it were "stunted and suffered from low egg production." When the plant was off-line for some months the crabs went back to normal, leading to speculation that heat, rather than radioactivity, might be causing the change.

But Wenner's visits to Santa Cruz Island started him thinking about another project, which began

along the beach. It sounds like a project that would have little connection with Santa Cruz, but in fact the island is very important.

These beetle fungi are highly specialized. As a hypothetical example, one species might grow only on the top half of the right front leg of male beetles. Another might be peculiar to the hindgut portions. Certain of these fungi will grow literally nowhere else.

Ross' research attempts to map out the life-cycle of the fungi (and with it the beetle's). The main question is, how does the fungus know it is in the right place? Something must be signaling the microscopic fungus that this is, indeed, the right-front leg of a male, but what does it? How do the cells recognize their location and go about their business? By studying the fungi, Ross hopes to learn more about how other cells (say, human ones) "know" what to do.

Santa Cruz Island enters the picture on two



counts. First, it's an easy place to work. "If we set up a trap on Santa Cruz Island, it will not be disturbed," says Ross. "On the mainland it will often be dug up or vandalized."

More important, the island provides "clean" populations for study. Several of the fungi that inhabit mainland beetles have not reached Santa Cruz Island. This provides Ross and his students with a reservoir of uncontaminated beetles to work with, an essential control in their research.

Another feature of the research station is its herbarium—a collection representing hundreds of plants that grow on the northern Channel Islands. Marla Daily, a 1972 UCSB graduate, helped start the herbarium in 1976 and did much of the initial field work involved. She tries to gather the entire plant (when practical), preferably in flower. The plant is then pressed and dried between newspapers, mounted on cotton paper, labelled, and filed by

family, genus, and species. Included in the herbarium are several of the rare plant species found nowhere else but Santa Cruz Island. The very rarest aren't collected even for scientific study—their populations are so small that they are left undisturbed.

A surprising number of different plant communities are found on the island, including those from pine forests, coastal salt marshes, chaparral, coastal sage, and oak woodlands. This botanic diversity correlates with the island's topographic diversity, which ranges from tidepools and dunes to the 2,434-foot peak known as Picacho Diablo.

The efforts of all botanists on the island are made more difficult by feral sheep and pigs. No one knows exactly when they were introduced to the island, but Daily describes their effect on the island as "devastating" and "unmerciful." "They have had a substantial, significant, overwhelming impact," she says. "If they were all removed tomorrow, it wouldn't be too soon from a botanical point of view." The sheep eat virtually anything in their paths, while the pigs dig under trees and damage the roots. Both have caused serious erosion in some areas.

Other Channel Islands, most notably San Clemente, Santa Barbara, San Miguel and San Nicolas, have been practically denuded by introduced goats, rabbits, or sheep that got out of control. The Nature Conservancy (which will eventually assume control of the western nine-tenths of the island) is doing everything it can to make sure this doesn't happen to Santa Cruz Island. A major study has been undertaken to determine how many feral pigs and sheep are on the island, and how they should be controlled. The task is made easier by the fact that the island is still privately held. On public lands the animals would be protected as public property (as are the goats on San Clemente). Since Santa Cruz Island is private property, the feral animals can be brought under control without having to offer them for public sale or adoption.

Research on Santa Cruz Island is not confined to the geology, flora and fauna. Larry Wilcoxon of the UCSB anthropology department is studying the island's early human inhabitants, the Chumash.

According to Wilcoxon, Santa Cruz Island was more heavily populated in Chumash times than it is now. He estimates that approximately 1,500 to 2,000 people were on the island when Juan Rodriguez Cabrillo made his voyage up the California coast in 1541.

Wilcoxon studies the Chumash by sorting through the remains of villages (not burial grounds) on the western part of the island. Of particular interest are the "trash piles" associated with village sites. By studying these he can determine an amazing amount of information about what the Chumash ate and how



**One of the largest
California wine selections
in town!**

— plus —

- a fine selection of imported and domestic beers!
- a full line of spirits, cordials, aperitifs, and liquors!
- imported and domestic champagnes!

ACE'S LIQUOR

1104 Chapala Street • 965-5527 • 966-4137

Open 7 days a week,
Mon.-Sat. 7-midnight
Sundays 9-11 pm

TRIPLE R PRESS

The "One Stop House"
For All Your
Printing Needs

Lithography • Letterpress
Computer Typesetting

440 RUTHERFORD ST.
GOLETA

967-5681

they lived.

As might be expected, seafood was a major part of the diet. The Chumash were accomplished fishermen, fashioning hooks out of shells, which they fixed with "tar" from natural seeps to lines of sea grass. Wilcoxon has tried fishing with some of the Chumash hooks (on a nylon line) to see how well they work. He says they are remarkably effective. The pearly finish on hooks made from abalone shells has much the same effect on fish as shiny, metallic lures.

Wilcoxon's work is made easier by the fact that the Santa Cruz Island village sites are virtually undisturbed. There are no burrowing animals on the island, and there has been little road construction or grading for agriculture. As a result the old village sites are almost completely intact. The finds made on Santa Cruz Island are helping to fill in the gaps in mainland studies. "You can study the structure of a village without having to jump to a lot of conclusions," according to Wilcoxon.

The Chumash maintained regular trade between the islands and the mainland. They built complicated 10-to-20-foot plank canoes, as well as simpler boats, both caulked with tar. The short length of the boards has led Wilcoxon to wonder whether driftwood was used in construction of the large craft. Covering the eighteen miles to Point Mugu in an open boat without a keel or a sail sounds forbidding, but the Chumash apparently made the trip frequently.

Santa Cruz Island was a center for the manufacture of shell beads, part of a complex inter-tribal monetary system. Shell beads of California origin have been found in Southwest desert pueblos, and it is possible that they originated on Santa Cruz Island.

In return for beads Wilcoxon believes the island dwellers got supplies which were scarce on Santa Cruz Island—particularly carbohydrates. In the Chumash diet this might include acorns and other seeds, meal, nuts and other plant food products.

The Chumash lived in dome-shaped structures made from whale bones and grasses, and had what many anthropologists believe to have been a highly developed culture. But the arrival of Europeans brought diseases like smallpox to the island. It's impossible to say now how the island dwellers were affected, but for many mainland tribes the effect was devastating. Nor was Santa Cruz Island left out of the mission program. During the early 19th century the island's population was taken to the mainland and "Christianized."

Another subject of study has been the island fox, a grey fox only about half the size of those found on the mainland. These foxes are relatively unafraid of humans and are very cute. The Chumash may have felt the same way and carried the foxes with them. The island fox is found on all but the smallest of the northern Channel Islands—Anacapa and Santa Barbara islands.

Like all species, the fox has had to adapt its diet to survive on the island. Dr. Lyndal Laughlin, who wrote his doctoral thesis on the fox, found that they eat a lot of manzanita and toyon berries, crickets



Above left: Chumash fishhooks in various stages of production. Above: Looking north along the western shore of Santa Cruz Island. Below left: A deer mouse. The species is found only on the island. Below right: The central valley of the island, with its many oaks, closely resembles the Santa Ynez Valley on the mainland.

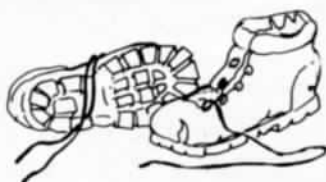
Photography by F.G. Hochberg



The University of California at Santa Barbara
Alumni Association

presents

NEW ZEALAND AND The Milford Track



Deep in the heart of the New Zealand Alps lies a 33-mile track reputed by many to be "the most beautiful walk in the world", and those fortunate few who have had the opportunity to try it will quickly agree. This is one highlight of your tour to New Zealand, a country which is fast becoming "the" favorite destination of world travelers. Both islands—the North Island with its jewel-like harbours, fertile fields and bubbling thermal ponds and the South Island with its mirror-like glacial lakes, lush rain forests and towering mountains, give evidence of Mother Nature working overtime when she created this incredibly scenic land. After discovering Auckland, Rotorua, Mount Cook, Queenstown, Christchurch, Te Anau, Milford Sound and the Milford Track, you may return to the USA or enjoy an additional 3 days in the Fiji Islands (optional extension \$275 additional). Destined to go down in the records as the most exciting alumni adventure of all time.

February 19–March 8, 1981 \$2695.00*

*per person, double occupancy, Los Angeles departure.

UCSB
ALUMNI
ASSOCIATION

REQUEST FORM

____ Sign me (us) up today! My reservation deposit (\$300 per person, please) is enclosed.

____ I (we) are definitely interested. Please send a brochure containing complete details.

NAME(s) _____

ADDRESS _____

CITY, STATE, ZIP _____

PHONE: Home _____ Business _____

UCSB Alumni Association, University of California,
Santa Barbara, CA 93106

and grasshoppers, plus mice and carrion when they can be found. He also found that the foxes liked to eat tree frogs and jays—in fact, he termed the island fox "an opportunistic omnivore, taking advantage of every possible food source." The fox is a "very agile tree climber"—sometimes they even have dens in hollowed limbs and stumps. But usually they will use a protected spot in the brush or rocks to rear their young.

Of course, University research is not all that happens on the island. For at least 100 years Santa Cruz Island has been run as a cattle and sheep ranch. But as the 20th century swept over the rest of California, the 19th lingered on Santa Cruz Island. The airplane brought the island a little closer to the mainland in terms of travel time, but it remains distant psychologically. Several Hollywood films have been shot on the island, taking advantage of the rural atmosphere and isolation.

During the 1930s it was suggested that the northern Channel Islands should be made a park, but the funding for the project remained a problem. Still, the idea that the island was something special, not to be disturbed, never died out. The Santa Cruz Island Company, which owns about 90 percent of the island, has maintained the property as a working ranch and has resisted suggestions to subdivide, which might have turned the island into a Catalina-style resort.

In 1977 the Nature Conservancy—a well-known private conservation group with a history of buying and protecting important properties—was approached about purchasing the company's part of Santa Cruz Island. A major fund drive was undertaken, and for a very reasonable sum an arrangement was made.

Subsequently, the Congress passed legislation establishing a Channel Islands National Park, and the law was signed only this year. The new park encompasses all of Santa Cruz Island, as well as the islands of San Miguel, Santa Rosa, Anacapa, and the water surrounding them. However, the Nature Conservancy will retain control over its part of Santa Cruz Island. The park will also be managed as a preserve more than a tourist attraction. Public access to the islands will always be limited and facilities minimal.

Meanwhile, the UC research station is seeking additional funding to maintain its role. Inflation and Proposition 13 cuts have affected the whole University system. It is hoped that grant money can be found to better administer and equip the station so that work can go on smoothly in the next few years.

When will the rest of us get to visit Santa Cruz Island?

The Nature Conservancy leads trips every few months, sometimes in cooperation with other organizations. Generally these are one-day trips, which means spending four hours in the boat and three on the island. But even a brief visit offers a glimpse into this fascinating remnant of undeveloped California.